**Science Third Grade**

**The embedded inquiry and technology and engineering standards should be taught all year through the content standards.**

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| **Embedded Inquiry**  **GLE 0307.Inq.1** Explore different scientific phenomena by asking questions, making logical predictions, planning investigations, and recording data.  **GLE 0307.Inq.2** Select and use appropriate tools and simple equipment to conduct an investigation.  **GLE 0307.Inq.3** Organize data into appropriate tables, graphs, drawings, or diagrams.  **GLE0307.Inq.4** Identify and interpret simple patterns of evidence to communicate the findings of multiple investigations.  **GLE 0307.Inq.5** Recognize that people may interpret the same results in different ways.  **GLE 0307.Inq.6** Compare the results of an investigation with what scientists already accept about this question. | |
| **Checks for Understanding** | **State Performance Indicators** |
| **✓0307.Inq.1** Identify specific investigations that could be used to answer a particular question and identify reasons for this choice.  **✓0307.Inq.2** Identify tools needed to investigate specific questions.  **✓0307.Inq.3** Maintain a science notebook that includes observations, data, diagrams, and explanations.  **✓0307.Inq.4** Analyze and communicate findings from multiple investigations of similar phenomena to reach a conclusion. | **SPI 0307.Inq.1** Select an investigation that could be used to answer a specific question. |
| **Embedded Technology & Engineering**  **GLE 0307.T/E.1** Describe how tools, technology, and inventions help to answer questions and solve problems.  **GLE 0307.T/E.2** Recognize that new tools, technology, and inventions are always being developed.  **GLE 0307.T/E.3** Identify appropriate materials, tools, and machines that can extend or enhance the ability to solve a specified problem.  **GLE 0307.T/E.4** Recognize the connection between scientific advances, new knowledge, and the availability of new tools and technologies.  **GLE 0307.T/E.5** Apply a creative design strategy to solve a particular problem generated by societal needs and wants. | |
| **✓0307.T/E.1** Explain how different inventions and technologies impact people and other living organisms.  **✓0307.T/E.2** Design a tool or a process that addresses an identified problem caused by human activity.  **✓0307.T/E.3** Determine criteria to evaluate the effectiveness of a solution to a specified problem.  **✓0307.T/E.4** Evaluate an invention that solves a problem and determine ways to improve the design. | **SPI 0307.T/E.1** Select a tool, technology, or invention that was used to solve a human problem.  **SPI 0307.T/E.2** Recognize the connection between a scientific advance and the development of a new tool or technology. |

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| **Unit 1**  **August 6, 2014 – October 3, 2014** | | | |
| **\*The order of the standards may be changed within a unit if needed for development of STEM challenges.**  **\*The embedded inquiry and technology and engineering standards should be taught through the content**  **standards.** | | | |
| **Grade Level Expectations** | **Checks for Understanding** | **State Performance Indicators** | **Teacher Resources** |
| **GLE 0307.1.1** Use magnifiers to make observations of specific plant and body parts and describe their functions.  **GLE 0307.2.1** Categorize things as living or non-living.  **GLE 0307.2.2** Explain how organisms with similar needs compete with one another for resources.  **GLE 0307.5.1** Explore the relationship between an organism’s characteristics and its ability to survive in a particular environment.  **GLE 0307.5.2** Classify organisms as thriving, threatened, endangered, or extinct.  **GLE 0307.3.1** Describe how animals use food to obtain energy and materials for growth and repair. | **✓0307.1.1** Use a magnifier to investigate anddescribe the function of root hairs, stem cross sections, and leaf veins.  **✓0307.1.2** Use a magnifier to investigate and describe the function of skin pores, hair follicles, finger nails, veins, and cuticles, etc.  **✓0307.2.1** Use a T-Chart to compare and contrast the characteristics of living and non-living things.  **✓0307.2.2** Label a drawing of an environment to illustrate interrelationships among plants and animals.  **✓0307.2.3** Construct a diagram to demonstrate how plants, animals, and the environment interact to provide basic life requirements.  **✓0307.5.1** Create representations of animals that have characteristics necessary to survive in a particular environment.  **✓0307.5.2** Investigate the connection between an organism’s characteristics and its ability to survive in a specific environment.  **✓0307.5.3** Describe how environmental factors change over place and time.  **✓0307.5.4** Determine how changes in an environmental variable can affect plants and animals of an area.  **✓0307.5.5** Construct a diorama that shows plants and animals in an appropriate environment.  **✓0307.5.6** Identify evidence used to determine the previous existence of an organism.  **✓0307.5.7** Use a data chart or informational text to classify organisms as thriving, threatened, endangered, or extinct.    **✓0307.3.1** Label a diagram to illustrate the food relationships that exist between plant and animals.  **✓0307.3.2** Create a chart to show how plants and animals satisfy their energy requirements.  **✓0307.3.3** Identify structures used by different plants and animals to meet their basic energy requirements.  **✓0307.3.4** Use a piece of text to obtain basic information about how plants and animals obtain food. | **SPI 0307.1.1** Identify specific parts of a plant and describe their function.  **SPI 0307.2.1** Distinguish between living and non-living things.  **SPI 0307.2.2** Determine how plants and animals compete for resources such as food, space, water, air, and shelter.  **SPI 0307.5.1** Investigate an organism’s characteristics and evaluate how these features enable it to survive in a particular environment.  **SPI 0307.5.2** Investigate populations of different organisms and classify them as thriving, threatened, endangered, or extinct.  **SPI 0307.5.3** Match the organism with evidence of its prior existence.  **SPI 0307.3.1** Identify the basic needs of plants and animals.  **SPI 0307.3.2** Recognize that animals obtain their food by eating plants and other animals. | pgs. 28 – 34  pgs. 40 – 44  pgs. 46 – 47  Include Journeys info text  pgs. 50 – 51  pgs. 52 – 56  pgs. 130 – 141    pgs. 158 – 160  pgs. 166 – 170  pgs. 62 – 66 |
| **Unit 2**  **October 6, 2014 – January 23, 2015** | | | |
| **It is recommended that data collection for weather conditions start in this unit.** | | | |
| **Grade Level Expectations** | **Checks for Understanding** | **State Performance Indicators** | **Teacher Resources** |
| **GLE 0307.4.1** Identify the different life stages through which plants and animals pass.  **GLE 0307.4.2** Recognize common human characteristics that are transmitted from parents to offspring.  **GLE 0307.9.1** Design a simple experiment to determine how the physical properties of matter can change over time and under different conditions.    **GLE 0307.9.2** Investigate different types of mixtures.  **GLE 0307.9.3** Describe different methods to separate mixtures. | **✓0307.4.1** Sequence diagrams that illustrate various stages in the development of an organism.  **✓0307.4.2** Create a timeline to depict the changes that occur during an organism’s life cycle.  **✓0307.4.3** Differentiate among the stages in the life cycle of a butterfly, mealworm, frog, and plant.  **✓0307.4.4** Draw conclusions about the similarities and differences between parents and their offspring.  **✓0307.4.5** Make a list of human characteristics that are transmitted from parents to their offspring.  **✓0307.9.1** Use physical properties to compare and contrast substances.  **✓0307.9.2** Compare and contrast events that demonstrate evaporation, crystallization, and melting.  **✓0307.9.3** Make predictions and conduct experiments about conditions needed to change the physical properties of particular substances.  **✓0307.9.4** Classify combinations of materials according to whether they have retained or lost their individual properties.  **✓0307.9.5** Investigate different ways to separate mixtures such as filtration, evaporation, settling, or using a sieve. | **SPI 0307.4.1** Select an illustration that shows how an organism changes as it develops.  **SPI 0307.4.2** Distinguish between characteristics that are transmitted from parents to offspring and those that are not.  **SPI 0307.9.1** Describe a substance in terms of its physical properties.  **SPI 0307.9.2** Identify methods for separating different types of mixtures. | pgs. 80 – 86  pgs. 92 – 96  pgs. 102 – 104  Include Journeys info text  pgs. 286 – 292, 298  pgs. 299 -- 304  pgs. 306 -- 307 |
| **GLE 0307.12.1** Explore how magnets attract objects made of certain metals. | **✓0307.12.1** Experiment with magnets to determine how distance affects magnetic attraction.  **✓0307.12.2** Determine that only certain types of objects are attracted to magnets. | **SPI 0307.12.1** Recognize that magnets can move objects without touching them.  **SPI 0307.12.2** Identify objects that are attracted to magnets. | pgs. 350 -- 353 |
| **GLE 0307.10.1** Investigate phenomena that produce heat.  **GLE 0307.10.2** Design and conduct an experiment to investigate the ability of different materials to conduct heat. | **✓0307.10.1** Associate the sun’s energy with the melting ofan ice cube placed in a window.  **✓0307.10.2** Investigate various materials to explore heat conduction. | **SPI 0307.10.1** Use an illustration to identify various sources of heat energy.  **SPI 0307.10.2** Classify materials according to their ability to conduct heat. | pgs. 310 -- 311  pgs. 312 -- 314 |
| **GLE 0307.11.1** Explore how the direction of a moving object is affected by unbalanced forces.  **GLE 0307.11.2** Recognize the relationship between the mass of an object and the force needed to move it. | **✓0307.11.1** Plan an investigation to illustrate how changing the mass affects a balanced system. | **SPI 0307.11.1** Identify how the direction of a moving object is changed by an applied force.  **SPI 0307.11.2** Demonstrate how changing the mass affects a balanced system. | pgs. 328 – 331  pgs. 332 – 334 |
| **Unit 3**  **January 26, 2015 – April 7, 2015** | | | |
| **Students can continue to collect weather data.** | | | |
| **Grade Level Expectations** | **Checks for Understanding** | **State Performance Indicators** | **Teacher Resources** |
| **GLE 0307.11.3** Investigate how the pitch and volume of a sound can be changed.  **GLE 0307.6.1** Identify and compare the major components of the solar system. | **✓0307.11.2** Use a variety of materials to produce sounds of different pitch and volume.  **✓0307.11.3** Classify a variety of taped sounds according to their pitch and volume.  **✓0307.6.1** Create a model of the solar system depicting the major components and their relative positions and sizes.  **✓0307.6.2** Use a table to compare and contrast the major solar system components. | **SPI 0307.11.3** Distinguish between pitch and volume.  **SPI 0307.11.4** Identify how sounds with different pitch and volume are produced.  **SPI 0307.6.1** Identify the major components of the solar system, i.e., sun, planets and moons. | pgs. 340 – 343  Include Journeys info text  pgs. 192 -- 198 |
| **GLE 0307.8.1** Recognize that that there are a variety of atmospheric conditions that can be measured.  **GLE 0307.8.2** Use tools such as the barometer, thermometer, anemometer, and rain gauge to measure atmospheric conditions.  **GLE 0307.8.3** Identify cloud types associated with particular atmospheric conditions.  **GLE 0307.8.4** Predict the weather based on cloud observations. | **✓0307.8.1** Select appropriate tools used for collecting weather data that correspond to the atmospheric condition being measured.  **✓0307.8.2** Identify major cloud types and associate them with particular weather conditions. | **SPI 0307.8.1** Choose the correct tool for measuring a particular atmospheric condition.  **SPI 0307.8.2** Match major cloud types with specific atmospheric conditions. | pgs . 248 – 249  pgs. 250 – 252  pgs. 258 -- 263 |
| **GLE 0307.7.1** Use information and illustrations to identify the earth’s major landforms and water bodies.  **GLE 0307.7.2** Recognize that rocks can be composed of one or more minerals. | **✓0307.7.1** Use a Venn diagram to compare and contrast two different landforms or bodies of water.  **✓0307.7.2** Analyze the physical characteristics of different kinds of rocks. | **SPI 0307.7.1** Classify landforms and bodies of water according to their geological features and identify them on a map.  **SPI 0307.7.2** Describe how rocks can be classified according to their physical characteristics. | pgs. 204 – 210  pgs. 215 – 222 |
| **GLE 0307.7.3** Distinguish between natural and manmade objects.  **GLE 0307.7.4** Design a simple investigation to demonstrate how earth materials can be conserved or recycled | **✓0307.7.3** Use a magnifier to observe, describe, and compare materials to determine if they are natural or manmade.  **✓0307.7.4** Design and evaluate a method for reusing or recycling classroom materials.  **✓0307.7.5** Create a web that demonstrates the link between basic human needs and the earth’s resources. | **SPI 0307.7.3** Identify an object as natural or manmade.  **SPI 0307.7.4** Determine methods for conserving natural resources. | pgs. 228 – 234  pgs. 236 -- 237 |
| **Unit 4: TCAP Review and Testing**  **April 8 – May 1** | | | |
| **Unit 5: After TCAP Units:**  **After TCAP, teachers may choose to revisit STEM challenges or choose to teach units found on the server for the time remaining in the school year.** | | | |